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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,206	03/23/2004	Takeshi Takahashi	119201	1908
25944 7590 05/09/2008 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
HODGE, ROBERT W				
ART UNIT		PAPER NUMBER		
1795				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/806,206

**Applicant(s)**

TAKAHASHI ET AL.

**Examiner**

ROBERT HODGE

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1795

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2, 5, 8, 14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2, 5, 8, 14 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

The Examiner Acknowledges that claims 1, 3, 4, 6, 7, 9-13, 15, 16 and 18 have been canceled and therefore any rejection or restriction requirement is now rendered moot.

Applicant's arguments, see Remarks, filed 2/11/08, with respect to the rejection of claims 2, 5, 8, 14 and 17 under 35 U.S.C. 112, first paragraph have been fully considered and are persuasive. The rejection of claims 2, 5, 8, 14 and 17 under 35 U.S.C. 112, first paragraph has been withdrawn.

Applicant's arguments, see Remarks, filed 2/11/08, with respect to the rejection(s) of claim(s) 2, 5, 8, 14 and 17 under 35 U.S.C. 102(b) and in the alternative 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. 2003/0035999.

### ***Claim Rejections - 35 USC § 102/103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Pre-Grant Publication No. 2003/0035999 hereinafter Gao.

Gao teaches a positive electrode active material for a nonaqueous electrolyte secondary battery comprising a lithium-transition metal composite oxide containing Zirconium of a layer structure such as  $\text{Li}_2\text{ZrO}_3$  (lithium zirconate), said active material layer being doped with Magnesium to provide overcharge protection (abstract, paragraphs [0005]-[0007], [0010], [0018]-[0020], [0031], [0036]-[0038] and claims 3 and 38).

In the alternative it would have been obvious to one having ordinary skill in the art to form the positive active material of Gao such that the "existence ratio" of zirconium on the surface of the lithium-transition metal oxide is greater than 20% (i.e. uniformly forming the surface element (Gao paragraph [0031])) in order to reduce the friction force among the active materials thereby increasing the flowability of the active material so that the positive electrode film has a higher density thus increasing the charge/discharge characteristics of the battery and also increasing the capacity of the battery. It further would have been obvious to optimize the "existence ratio" of Gao since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, in the absence of unexpected results. In re Boesch, 617 E.2d 272, 205 USPQ 215 (CCPA 1980). Therefore the burden is shifted to applicants to prove in the form of evidence that the invention of Gao does not exhibit the same existence ratio as the instantly claimed invention.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao in view of U.S. Pre-Grant Publication No. 2002/0127473 hereinafter Ooya.

Gao further teaches that the positive active material further comprises a conductive agent and a non-aqueous electrolyte secondary battery comprising a positive electrode employing the positive active material, a negative electrode comprising a lithium metal or lithium alloy and a separator between the positive and negative electrodes.

Gao does not teach that the surface element exists between the positive active material and the conductive agent or that the positive active material is layered onto a positive electrode current collector or winding the electrodes and separator.

Ooya teaches a wound nonaqueous electrolyte secondary battery comprising a positive electrode current collector having on at least one side a positive active material comprising a layer of a lithium-transition metal composite oxide such as lithium nickel cobaltate, a surface element that is at least zirconium that exists between the positive active material and a conductive agent, a separator located between the positive electrode and a negative electrode, said negative electrode comprising a current collector having a layer of at least a lithium metal, a lithium alloy, a carbon material capable of intercalating and deintercalating lithium ions or a compound capable of intercalating and deintercalating lithium ions and the electrodes and separator are

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layered against one another (see paragraphs [0017]-[0034], [0055]-[0059], [0062]-[0070] and [0084] and table 1).

At the time of the invention it would have been obvious to one having ordinary skill in the art to modify Gao such that the surface agent exists between the positive active material and the conductive agent, layering the positive active material onto a positive electrode current collector and winding the electrodes and separator as taught by Ooya in order to provide a nonaqueous electrolyte secondary battery that will have increased packing density and improved discharge rate characteristics of the battery by lowering an impedance of the positive electrode.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./  
Examiner, Art Unit 1795

/Jonathan Crepeau/  
Primary Examiner, Art Unit 1795